

H-204258

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Stephen J. Myers)	
)	Group Art Unit: 1764
Serial No.:	09/392,947)	
)	
Filed:	September 9, 1999)	
)	Examiner: H. Tran
For:	CONVERTER WITH SHELL)	
	SIZED TO ENDPLATES)	

APPEAL BRIEF

VIA FACSIMILE: 703 872 9311
Commissioner for Patents
Alexandria, VA 22313-1450

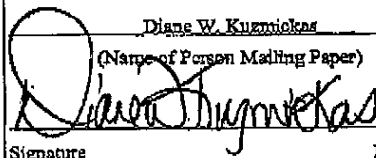
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I. REAL PARTY IN INTEREST

The real party in interest in this appeal is Delphi Technologies, Inc.

II. RELATED APPEALS AND INTERFERENCES

There are no other appeals or interferences known to Appellant, Appellant's legal representatives, or Assignee, which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

III. STATUS OF THE CLAIMS

Claims 1-12, 14, and 23-32 are pending in the present application. Claims 1-12, 14, 23-32 have been rejected.

IV. STATUS OF THE AMENDMENTS

No amendments have been submitted following the final rejection.

V. SUMMARY OF THE PRESENT APPLICATION

Catalytic converters have been employed to catalyze exhaust gasses in vehicles for more than twenty years and have been manufactured in a number of ways. Catalytic converters play a critical role in ensuring that fuel rich gasses are converted down to acceptable levels, and not coincidentally, they are a comparatively expensive article within an exhaust system. The materials are expensive, and manufacture is labor intensive. Furthermore, design packages that increase durability and improve overall system performance for reductions in emissions are at a premium. Accordingly, methods of manufacture have been put forth in attempts to reduce manufacturing costs, while at the same time, increase durability and stabilize system performance. (Originally filed specification, page 1, lines 13-22).

The present invention relates to a method of producing catalytic converters, the housing or canister of which is sized down onto endplates. (Originally filed specification, page 1, lines 8-9).

The endplates may be any practicable shape as long as they are compatible with the final shape of the catalytic converter. Securing of the endplates to a catalyst substrate can be effected

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by the securing mechanism 32, which is permanently affixed to the endplates. (Originally filed specification, page 5, lines 11-19).

The catalytic converter of Applicant's disclosure "effectively overcomes a plurality of problems associated with conventional converters. Primary among these, the present converter design allows use of endplates or end cones having a smaller diameter or cross-section than the shell. Because of this, the design allows the endplates to be assembled prior to working with the outer shell, which further allows an insulating material of sufficient density to be placed around the end plenums of the converter. In contrast to the insulation of conventional converters, the present invention permits extension of insulation material beyond the face of the catalyst substrate, where such material effectively provides full insulation of the converter, including the end plenum areas, and increases converter life." (Originally filed specification, page 8, line 23 to page 9, line 2).

VI. ISSUES

1. WHETHER U.S. PATENT NO. 4,413,392 TO OTANI ET AL. ANTICIPATES CLAIMS 1-8, 10 AND 23-32 UNDER 35 U.S.C § 102(b).

2. WHETHER U.S. PATENT NO. 4,581,206 TO OTANI ET AL. ANTICIPATES CLAIMS 1-8, 10, 14, 23-27, AND 29-32 UNDER 35 U.S.C § 102(b).

3. WHETHER U.S. PATENT NO. 4,413,392 TO OTANI ET AL. OR U.S. PATENT NO. 4,581,206 TO OTANI ET AL. IN VIEW OF U.S. PATENT NO. 3,832,443 TO HASS OR U.S. PATENT NO. 3,441,381 TO KEITH ET AL. RENDERS CLAIMS 11-12 OBVIOUS UNDER 35 U.S.C § 103(a).

4. WHETHER U.S. PATENT NO. 4,413,392 TO OTANI ET AL. RENDERS CLAIMS 4, 9, AND 14 OBVIOUS UNDER 35 U.S.C § 103(a).

5. WHETHER U.S. PATENT NO. 4,581,206 TO OTANI ET AL. RENDERS CLAIMS 4, 9, AND 28 OBVIOUS UNDER 35 U.S.C § 103(a).

VII. GROUPING OF THE CLAIMS

Claims 1-12, 14, and 23 are directed to an exhaust system converter comprising a catalyst, a first endplate positioned adjacent to a first end portion of the catalyst, the first endplate defining a first extreme end of the converter and comprising a first endplate support mechanism

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extending perpendicularly therefrom toward the catalyst, a mat support substantially covering the catalyst and at least a portion of the first endplate support mechanism, wherein the first endplate support mechanism is disposed between the mat support and the catalyst, and a shell having a diameter greater than that of the first endplate, wherein the shell is disposed around the catalyst and the mat support, and is disposed around and in intimate contact with at least a portion of the first endplate.

Claims 24-32 are directed to an exhaust system converter comprising a catalyst, a first endplate, positioned adjacent to a first end portion of the catalyst, the first endplate defining a first extreme end of the converter and comprising a first endplate support mechanism extending perpendicularly therefrom, a second endplate, positioned adjacent to a second end portion of the catalyst, the second endplate defining a second extreme end of the converter and comprising a second endplate support mechanism extending perpendicularly therefrom toward the catalyst, a mat support substantially covering the catalyst, the mat support extending beyond a face of the catalyst over at least a portion of the first endplate support mechanism, wherein the first endplate support mechanism is disposed between the mat support and the catalyst, and a shell disposed around the catalyst and the mat support, and is disposed around and in intimate contact with at least a portion of the first endplate and the second endplate.

VIII. ARGUMENT

1. Claims 1-8, 10, and 23-32 are patentable under 35 U.S.C §102(b) over U.S. Patent No. 4,413,392 to Otani et al. (hereinafter "Otani '392") and Claims 1-8, 10, 14, 23-27, and 29-32 are patentable over U.S. patent No. 4,581,206 to Otani et al. (hereinafter "Otani '206").

Otani '392 is directed to a method of making a catalytic converter constructed by

simultaneously pushing two catalyst elements through the intermediary of flanged sleeves into opposite ends of the catalyst casing, using tapered guide rings and flanged pusher bars to squeeze peripheral cushions into place within the catalyst casing and around each of the catalyst elements. Welding electrodes are then used in combination with the flanged pusher bars to spot weld the catalyst casing to the flanged sleeves.

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(Otani '392, Col. 1, lines 30-40, and Abstract). Additionally, Otani '392 teaches that the flange sleeve 36 is positioned between end ring 23a and a muffler 10 (i.e., end cones that muffle noise). (See Figures 2, 5, and 6). Otani '392 does not teach a first endplate support mechanism, a mat support covering a catalyst and, at least, a portion of the first endplate support mechanism. Actually, Otani '392 doesn't even disclose an endplate. (See Figure 6).

To anticipate a claim, a reference must disclose each and every element of the claim. *Lewmar Marine v. Variant Inc.*, 3 U.S.P.Q.2d 1766 (Fed. Cir. 1987).

The Examiner stated that the argument that Otani '392 does not teach a first endplate defining the first end of the catalyst converter was not persuasive as the flanged sleeve 36 in Otani '392 is considered as an endplate. The Examiner stated that "Applicants argue that the flanged sheet of Otani '392 has a different design from that of the instant claim because the flanged sleeve of Otani '392 is a wide-open cylindrical ring to which a muffler may be attached. Such contention is not persuasive as language of the claim does not exclude such wide-open cylindrical ring of Otani '392." (Paper 19, page 2). Applicant respectfully disagrees with the Examiner that flanged sleeve 36 is an endplate. As explained above, an endplate is a commonly understood term of art. An artisan would not understand a wide open cylindrical ring to be an endplate. Applicants contend that in order to reject the present claims over Otani '392, the Examiner is disregarding the term "endplate" that is clearly and distinctly claimed.

Applicant submits that "endplate" is a term of art readily understood by one of ordinary skill in the art. As is well known, endplates and end cones are at the end of the shell that enable fluid communication into the shell for example, from an engine, or out of the shell to an exhaust pipe. As is well known, these elements convert the openings of the shell to the size of the conduit/manifold that will engage the shell. An end cone, as its name suggests, is conical or cone-like, while an endplate is plate-like. Figures 4 and 5 show exemplary endplates 30.

Accordingly, Applicant submits that Otani '392 does not teach an endplate. Rather, Otani '392 teaches that flanged sleeves 36 and 37 are placed over enlarged ends 38 and 39 of pusher bars 41 and 42. (Col. 3, lines 4-5). If Otani '392 taught an endplate as claimed by Applicant rather than a "sleeve", the endplate would not be able to slide over the enlarged ends of the pusher bar. If the endplate is not able to slide over the enlarged end of the pusher bar, a catalytic converter could not be constructed by simultaneously pushing two catalyst elements through the intermediary of flanged sleeves into opposite ends of the catalyst casing, using

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tapered guide rings and flanged pusher bars to squeeze peripheral cushions into place within the catalyst casing and around each of the catalyst elements as taught in Otani '392. Flanged sleeve 36 is not an endplate. Otani 392 do not teach an "endplate."

Additionally, even if the Board were to find that the flange sleeve is an "endplate", which it is not, Otani '392 does not teach "a first endplate support mechanism extending perpendicularly therefrom", wherein [the] first endplate support mechanism is disposed between [the] mat support and [the] catalyst." Rather, Otani '392 teaches that the sleeve flange 36 is disposed adjacent to end ring 23a. The figures of Otani '392 do not show a first endplate support mechanism disposed between a mat support and a catalyst, and the specification of Otani' 392 is also silent on this point. Actually, the flanged sleeve 36 is not even between the shell and the catalyst in Otani '392. (See Figures 5 and 6). Since Otani '392 at least fails to teach a first endplate support mechanism disposed between a mat support and a catalyst, Otani '392 fails to teach each and every element of Applicant's independent Claims 1 and 24. Accordingly, Otani '392 does not anticipate Applicant's independent Claims 1 and 24. Moreover, as dependent claims from an allowable independent claim, Claims 2-8, 10, 23 and 25-32 are by definition also allowable. Accordingly, Applicant respectfully requests reversal of the Examiner's rejections and allowance of the Claims.

With regard to Applicants' independent Claim 24, Applicant submits that independent Claim 24 contains additional patentably distinct features not taught by Otani '392. For example, Applicant's independent Claim 24 teaches "a second endplate, positioned adjacent to a second end portion of [the] catalyst, [the] second endplate defining a second extreme end of [the] converter and comprising a second endplate support mechanism extending perpendicularly therefrom toward [the] catalyst."

In contrast, Otani '392 teaches:

catalyst elements 21 and 22 are each encircled by peripheral cushions 23 and 24, respectively, which hold the elements 21 and 22 in place within the catalyst casing 19. Flanged metal sleeves 25 and 26 are mounted back-to back within the catalyst casing 19 and at least one of them is fixed in position by welding 27. The catalyst element 21 is positioned adjacent the metal sleeve 25 and the catalyst element 22 is positioned adjacent the metal sleeve 26. End rings 23a, 23b, 24a and 24 b engage the end surfaces of the catalyst elements 21 and 22, to prevent shifting axially.

(Col. 2, lines 14-25).

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In other words, Otani '392 teaches a first catalyst element and a second catalyst element. Each catalyst element is positioned adjacent to an end ring at one end, which is positioned adjacent to flanged sleeve. At another end of a catalyst element, a flanged metal sleeve is positioned. As such, even if Otani '392 taught all the other elements of Claim 24 as discussed above, which it does not, Otani '392 fails to teach "a second endplate, positioned adjacent to a second end portion of [the] catalyst, [the] second endplate defining a second extreme end of [the] converter and comprising a second endplate support mechanism extending perpendicularly therefrom toward [the] catalyst." That is, Otani '392 fails to teach a first and a second endplate positioned adjacent to the same catalyst as taught by Applicant. For at least this reason, Otani '392 fails to teach each and every element of Claim 24. As such, Otani '392 does not anticipate Claim 24. Accordingly, Applicant respectfully requests reversal of the Examiner's rejections and allowance of this case. With regard to Otani '206, this reference essentially teaches the same as Otani '392. For example Otani '206 is directed to "a catalytic converter assembly of the type generally employing multiple catalytic elements." (Otani '206, Col. 1, lines 56-58). Additionally, Otani '206 teaches, "surrounding each of the catalytic elements 28 and 30 are cushion members 40 and 42." (Col. 2, lines 50-51). "Outwardly of the cushioned catalytic elements 28 and 30 are end set plates 52 and 54". (Col. 2, lines 59-60). These "end set plates 52 and 54" are analogous to the flanged sleeves 36 and 37 of Otani '392.

Applicant respectfully directs the Board's attention to the previously made arguments made in response to the Otani '392 rejection. For at least those reasons, Otani '206 fails to teach "an exhaust system converter comprising a catalyst, a first endplate positioned adjacent to a first end portion of [the] catalyst, [the] first endplate defining a first extreme end of [the] converter and comprising a first endplate support mechanism extending perpendicularly therefrom toward [the] catalyst, a mat support substantially covering [the] catalyst and at least a portion of [the] first endplate support mechanism, wherein [the] first endplate support mechanism is disposed between [the] mat support and [the] catalyst, and a shell having a diameter greater than that of [the] first endplate, wherein [the] shell is disposed around [the] catalyst and the mat support, and is disposed around and in intimate contact with at least a portion of [the] first endplate", as taught in Applicant's Claim 1. In addition, Otani '206 fails to teach additional patentably distinct limitations disclosed in Applicant's independent Claim 24. For example Otani '206 fails to teach "a second endplate, positioned adjacent to a second end portion of [the] catalyst, [the] second

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endplate defining a second extreme end of [the] converter and comprising a second endplate support mechanism extending perpendicularly therefrom toward [the] catalyst."

For at least the foregoing reasons, Otani '206 fails to teach each and every element of Applicant's independent Claims 1 and 24. Since Otani '206 fails to teach each and every element of Applicant's independent Claim 1 and 24, Otani '206 does not anticipate independent Claim 1 and 24. Moreover, as dependent Claims from an allowable independent Claim, Claims 1-8, 10, 14, and 23-32 are, by definition, also allowable. Accordingly, Applicant respectfully requests reversal of the Examiners rejection and allowance of the case.

2. Claims 4, 9, 11-12, 14, and 28 are patentable under 35 U.S.C §103(a) over Otani '392 or Otani '206 in view of U.S. Patent No. 3,832,443 to Hass or U.S. Patent No. 3,441,381 to Keith et al.

Hass is directed to a process "for the catalytic conversion of nitrogen oxides, unburned hydrocarbons and carbon monoxide in exhaust gases initially containing less than a stoichiometric ratio of oxygen to carbon monoxide." (Abstract).

Keith et al. is directed to "an apparatus for purifying external combustion engine exhaust gases compris[ing] a catalyst, having a cylindrical unitary ceramic skeletal structure with gas flow passages therethrough, disposed in a metal cylindrical housing of larger diameter leaving a narrow annular space between the ceramic structure and the metal housing." (Abstract).

For an obviousness rejection to be proper, the Examiner must meet the burden of establishing that all elements of the invention are disclosed in the prior art; that the prior art relied upon, coupled with knowledge generally available in the art at the time of the invention, must contain some suggestion or incentive that would have motivated the skilled artisan to modify a reference or combined references; and that the proposed modification of the prior art must have had a reasonable expectation of success, determined from the vantage point of the skilled artisan at the time the invention was made. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988); *In Re Wilson*, 165 U.S.P.Q. 494, 496 (C.C.P.A. 1970); *Amgen v. Chugai Pharmaceuticals Co.*, 927 U.S.P.Q.2d, 1016, 1023 (Fed. Cir. 1996).

Since Otani '392 and Otani '206 do not teach each and every element of Applicant's independent Claims 1 and 24, as discussed above, Otani '392 and Otani '206 must contain some suggestion or incentive to modify their teachings. Absent in Otani '392 and Otani '206 is any

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suggestion to make "an exhaust system converter comprising a catalyst, a first endplate positioned adjacent to a first end portion of [the] catalyst, [the] first endplate defining a first extreme end of [the] converter and comprising a first endplate support mechanism extending perpendicularly therefrom toward [the] catalyst, a mat support substantially covering [the] catalyst and at least a portion of [the] first endplate support mechanism, wherein [the] first endplate support mechanism is disposed between [the] mat support and [the] catalyst, and a shell having a diameter greater than that of [the] first endplate, wherein [the] shell is disposed around [the] catalyst and the mat support, and is disposed around and in intimate contact with at least a portion of [the] first endplate." Additionally, absent in Otani '392 and Otani '206 is the suggestion to use "a second endplate, positioned adjacent to a second end portion of [the] catalyst, [the] second endplate defining a second extreme end of [the] converter and comprising a second endplate support mechanism extending perpendicularly therefrom toward [the] catalyst." As such, Applicant's independent Claims 1 and 24 are not obvious over Otani '392 and Otani '206.

Furthermore, Hass or Keith et al., either alone or in combination with Otani '392 and Otani '206, fail to cure the deficiencies of Otani '392 and Otani '206. Hass and Keith et al. are "only relied upon for teaching the specific type of catalyst material." (Paper 17, page 6). Absent in Hass and Keith et al. are any teachings or suggestion of an endplate, a mat support, and a shell. Additionally, absent are any teaching or suggestion of the relationship of these components. More particularly, Hass and Keith et al. at least fail to teach or suggest "[the] first endplate support mechanism is disposed between [the] mat support and [the] catalyst." As discussed above, Otani '392 and Otani '206 failed to teach or suggest at least this element of Applicant's claimed invention. As such, the above cited references, either alone or in combination, fail to at least teach or suggest Applicant's independent Claims 1 and 24. Since the above-cited references fail to teach or suggest Applicant's independent Claims 1 and 24, Applicant's independent Claims 1 and 24 are not obvious over Otani '392 and Otani '206, either alone or in combination with Hass or Keith et al. As such, Claims 11-12 are allowable, for at least the reason that they depend from and allowable independent Claim 1. Accordingly, Applicant respectfully requests reversal of the Examiner's rejection and allowance of the case.

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CONCLUSION:

In view of the forgoing, it is urged that the Final Rejection of Claims, 1-12, 14, and 23-32 be reconsidered and withdrawn. The final rejection is in error and should be reversed.


Respectfully submitted,

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